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**FROM:** S. Joseph Lesley, Right of Way Development Administrator  
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**DATE:** August 23, 1999

**SUBJECT:** Guidelines of Seeding and Mulching

The attached guidelines for seeding and mulching are effective immediately and recommended for use on all plans that have not gone through semi-final review. Further, use of these guidelines may be beneficial on projects that are beyond the semi-final review stage and their use is at the discretion of the project manager or project engineer.

These guidelines contain several significant changes from existing guidelines. Some of these are the recommended use of Permanent Grass Seeding, Dry Ground in areas where Crownvetch Seeding was previously recommended. And in mulching, DelDOT is now using an approved product list of erosion control blankets. This is a new method of specifying erosion control blankets in construction and maintenance work in DelDOT.

Please let us know of any concerns and questions on the use of these guidelines.

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# **Guidelines for Seeding and Mulching**

**Delaware Department of Transportation  
Dover, Delaware  
August 23, 1999**

## **I. Seeding**

Based on experience during the past few years on slope stabilization, we are encouraging the use of Permanent Grass Seeding, Dry Ground on all slopes except those areas affected by wetness such as in ponds and in wet ditches. The seeding guidelines issued in October 3, 1995 is therefore revised as follows:

### **Item No. 734013 – Permanent Grass Seeding, Dry Ground**

Permanent Grass Seeding, Dry Ground is recommended on all slopes except those areas affected by wetness such as in ponds and in wet ditches. The area shall be topsoiled with 150 mm (6 inches) of approved topsoil in accordance with Section 732 or 733 topsoil or topsoiling and tracked before seeding.

### **Item No. 734015 - Permanent Grass Seeding, Wet Ground**

Permanent Grass Seeding, Wet Ground is recommended on all areas delineated or defined as wetland on the plans with the exception of dry fill such as stormwater pond embankments and dikes or re-graded areas comprised of fill above the original wetland profile. The area shall be topsoiled with 150 mm (6 inches) of approved topsoil in accordance with Section 732 or 733 topsoil or topsoiling and tracked before seeding.

Permanent dry fill areas above the original wetland profile, as described above, shall be seeded with Permanent Grass Seeding, Dry Ground.

In stormwater ponds with permanent pool, this seeding mix shall be applied from the permanent pool level up to 600 mm (24 inches) in elevation up the slope. In ponds without permanent pool, this seeding mix shall be applied from the pond bottom to the elevation reached during flood routing 25 mm (1 inch) of runoff (water quality extended detention).

### **Item No. 734016 – Permanent Grass Seeding, Subdivision**

Permanent Grass Seeding, Subdivision shall be used on all areas defined as legal subdivision or residential communities where DelDOT provides maintenance from curb to curb only or is limited to the travelways and shoulders. Areas specified for permanent grass seeding, subdivision shall be topsoiled with 150 mm (6 inches) of approved topsoil in accordance with Section 732 or 733 topsoil or topsoiling and tracked before seeding.

### **Item No. 734017 – Temporary Grass Seeding, Dry Ground**

Temporary Grass Seeding, Dry Ground shall be used on all areas that are in upland and disturbed during active construction and/or before the establishment of permanent grades as determined by the Engineer. Topsoil shall not be used but the area shall be tracked before seeding and mulched.

### **Item No. 734018 – Temporary Grass Seeding, Wet Ground**

Temporary Grass Seeding, Wet Ground shall be used on leaf litter covered or partially vegetated retention ponds, sediment traps and basins, and all intermittently flooded sites during construction. Topsoil and mulch shall not be used.

## **II. Mulching**

The following mulching guide shall be used together with the current Approved Product List. The type of mulch application on slope stabilization is based on soil type, slope and slope length.

On ditches, the type of mulch application is based on the maximum shear stress at design flow. The shear stress method of evaluating stability of ditches has become the method of choice in the engineering profession. It is a more compact method than the permissible velocity method because the failure criteria for a particular lining are represented by a single critical shear stress value. This critical shear stress value is applicable over a wide range of channel slopes and channel shapes. Permissible velocities, on the other hand, are a function of lining roughness, channel slope and channel shape, and are only approximately constant over a range of these parameters (HEC 15, Federal Highway Administration).

Allowable shear stress values for different types of natural surfaces and erosion control blankets are now available in the literature. Note that non-degradable erosion control blankets are recommended on ditches that have maximum shear stress at design flow greater than 96 Pascals (2 pounds per square feet (psf)). Ninety six Pascals (2 psf) is about the highest stress that a mature and fairly dense grass lining can withstand before failure begins. Therefore, on ditches that have maximum shear stress at design flow greater than 96 Pascals (2 psf), turf reinforcement mats shall be used. These blankets are composed mostly of non-degradable materials that will provide reinforcement to grass roots and stems thus increasing their natural strength and resistance to failure.

# Mulching Guide

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Dover, Delaware  
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**Note:** Refer to current **Approved Product List** for a listing of soil retention blanket mulches by type and Specifications for Items Numbers 735531 through 735537.

<b>Soil Types and Slope, or Shear Stress Categories</b>	<b>Recommended Mulch</b>
Sandy Soil on slopes Steeper than 1V:3H	Approved Product List, Type 1 (# <b>735531</b> )
Sandy soils on slopes Equal to or flatter than 1V:3H	Straw (tracked, crimped or tacked) (# <b>7355006</b> ) Approved Product List, Type 2 (# <b>735532</b> )
Top-soiled slopes steeper than 1V:3H and  Slope length less than or equal to 15 meters (50 Feet)  Slope length greater than 15 meters (50 feet)	Straw (tracked, crimped or tacked) (# <b>7355006</b> ) Approved Product List, Type 3 (# <b>735533</b> )  Approved Product List, Type 3 ( # <b>735533</b> )
Top-soiled slopes equal to or flatter than 1V:3H	Straw (tracked, crimped or tack) (# <b>7355006</b> ) Approved Product List, Type 4 (# <b>735534</b> )
Top-soiled Grass Swale at maximum design shear stress less than or equal to 96 Pascals (2 pounds per square foot (psf))	Approved Product List, Type 5 (# <b>735535</b> )

Top-soiled Grass Swale at maximum design shear stress greater than 96 Pascals and less than or equal to 287 Pascals (6 psf)	Approved Product List, Type 6 (# <b>735536</b> )
Top-soiled Grass Swale at maximum design shear stress greater than 287 Pascals (6 psf) and less than or equal to 383 Pascals (8 psf)	Approved Product List, Type 7 (# <b>735537</b> )